Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A method for measurement of chromatic dispersion in an optical channel of an optical communication line, suitable for transmitting an optical signal at a predetermined optical wavelength being a carrier wavelength of said optical channel, the method comprising steps of:
introducing controlled changes of wavelength around said predetermined wavelength,
monitoring the optical signal that has passed said line, and obtaining from said optical signal:
[[-]] a first signal dynamically reflecting changes of the carrier wavelength of said optical signal,
[[-]] a second signal dynamically reflecting changes of delay of the same said optical signal transmitted via said line,comparing the first signal with the second signal, and determining the chromatic dispersion sign based on the phase difference between the compared first and second signals.

2. (original) The method according to Claim 1, additionally comprising transmitting data via the optical communication line using, as a carrier, the optical signal at the changing wavelength; in the method, the second signal reflects changes of delay of the data transmitted with said optical signal via said line.

3. (currently amended) The method according to Claim 1, additionally comprising the following ~~cyclically repeating~~ step:
based on the determined sign of dispersion, repeatedly introducing a dispersion increment having the opposite sign, up to the opposite sign of the dispersion is determined in the optical communication line,

thereby compensating chromatic dispersion in the optical communication line.

4. (currently amended) The method according to Claim 1, additionally comprising the following steps:
introducing at a transmission site a delay variation synchronized with variation in the wavelength so as to create an offset in the delay at a receiving site, and
based on the determined sign of dispersion, repeatedly introducing a dispersion increment having the opposite sign, up to the opposite sign of the dispersion is determined in the optical communication line,
thereby keeping dispersion of the optical communication line close to a specific value.

5. (original) The method according to Claim 3, comprising selecting the dispersion increment to provide accurate compensation of the dispersion and keeping it as close as possible to a predetermined value.

6. (original) The method according to Claim 1, being performed continuously and automatically.

7. (currently amended) The method according to Claim 1, wherein, for introducing controlled changes of the wavelength, ~~it~~ the method comprises
introducing a dither by changing the wavelength of said optical signal to be transmitted in a periodic manner around the predetermined wavelength.

8. (currently amended) A system for measurement of chromatic dispersion in an optical channel of an optical line, the system including a receiving node, a transmitting node and the optical line connecting said nodes and intended for transmitting an optical signal at a particular optical carrier wavelength of said optical channel, wherein

the transmitting node comprises means for controlled changing wavelength of the optical carrier around said particular wavelength at a predetermined manner, and for transmitting the optical signal by said changing optical carrier via the optical line,

the receiving node comprises:

means for monitoring ~~the~~ dynamic wavelength changes in the optical signal of said optical channel received via the optical line, to produce a first signal,

means for monitoring dynamic phase changes caused in the optical signal of said optical channel received via the optical line, to produce a second signal;

a phase comparator for comparing the phase of the first signal to the phase of the second signal to determine the sign of chromatic dispersion in the optical channel of the optical line.

9. (original) The system according to Claim 8, further comprising means for transmitting data via said

optical line using said optical signal having the changing wavelength, as a carrier.

10. (original) The system according to Claim 8, including a dispersion compensation unit inserted in the optical line and controllable by said phase comparator.

11. (currently amended) The system according to Claim 10, wherein the dispersion compensation unit is adapted to ensure zero dispersion in the optical signal incoming the ~~receiver~~ receiving node.

12. (original) The system according to Claim 8, wherein the controlled changes of the wavelength are introduced by using a periodic symmetric dither at the transmitter node.

13. (currently amended) A receiving node equipment suitable for ~~being used in the system according to Claim 8~~ measurement of chromatic dispersion in an optical channel of an optical communication line, while an optical signal is transmitted between a transmitting node and a receiving node at an optical carrier wavelength of said optical channel, wherein said wavelength being controllably changed, the receiving node equipment comprising:

means for monitoring dynamic changes of ~~a~~ the carrier wavelength in ~~an~~ said optical signal received via ~~an~~ the optical channel of said optical line, to produce a first signal,

means for monitoring dynamic phase changes in the optical signal received via the optical channel of said optical line, to produce a second signal; and

a phase comparator for comparing the phase of the first signal to the phase of the second signal to determine the sign of chromatic dispersion in the optical channel of said optical line.

14. (currently amended) The receiving node equipment according to Claim 13, additionally comprising a dispersion compensating device controllable by said phase comparator.

15. (currently amended) The receiving node equipment according to Claim 13, wherein the first signal ~~at a receiver portion of said node~~ is produced by AM demodulation, provided that the controlled wavelength changes are introduced using the AM modulation technique at ~~a transmitter portion of a preceding~~ the transmitting node.

16. (currently amended) The receiving node equipment according to Claim 13, wherein the means for monitoring phase changes in the received optical signal comprises a PLL (Phase Lock Loop) circuit.